FALL SAMPLING ON PRAIRIE CREEK RESERVOIR, DELAWARE COUNTY
2004

Prairie Creek Reservoir is a 1,252 acre water supply for the city of Muncie located in southeastern Delaware County. Prairie Creek drains to the West Fork White River. During low water, the reservoir is used to maintain the water level in the WF White River for the city water supply. The land surrounding the reservoir is managed by the Muncie Parks and Recreation Department as a recreation area that includes a beach, campground, boat ramp, docking facilities, and picnic areas. A fee is charged to fish or launch a boat at the reservoir with the money going towards a fish stocking program. Past stockings have included largemouth bass, walleye, northern pike, white bass and various panfish. Sparse stocking records were kept and all of these fish were obtained from private sources.

In 2001, the Division of Fish and Wildlife began managing Prairie Creek Reservoir for walleye with the stocking of 1-2 inch long fingerlings in late May each year. Target stocking rate is 50 per acre. First year survival is assessed by four hours of DC electrofishing over two nights in October. During the 2003 sampling, one gizzard shad was collected; the first record from Prairie Creek Reservoir. In 2004, in addition to the night electrofishing, four gill-nets were used to collect older age walleye, other predators and gizzard shad to determine baseline data to assess impacts of an expanding gizzard shad population.

During the two nights of electrofishing a total of 285 walleyes were collected. Of these, 260 were young-of-year (YOY) for a catch rate of 65 per hour. Length range was 5.5 to 9.9 inches. This was the second highest catch rate since beginning of the stocking program (Table 1).

Fifteen were age 1+ for a catch rate of 3.75 per hour. Length range was 6.4-15.1 inches. This was the lowest catch rate for age 1+ walleye since 2001. The age 1+ collected in 2001 were from fish stocked previously by the Muncie Parks and Recreation Department.

Seven age 2+ walleye were collected. Length range was 12.7-17.9 inches. Catch rate for age 2+ was the same as in 2001.

Two age 3+ walleye were collected for a catch rate of 0.5 per hour. Lengths were 13.8 and 17.2 inches.

Table 1. Catch per hour (CPUE) and length range (in) of walleye at Prairie Creek Reservoir by age group, 2001 through 2004.

	2001		2002		2003		2004	
Age	CPUE	Lgth.	CPUE	Lgth.	CPUE	Lgth.	CPUE	Lgth.
0+	74.75	4.1-9.6	36.5	6.2-11.3	49.75	5.3-12.8	65.0	5.5-9.9
1+	2.5	10.4-11.9	17.75	8.3-12.0	16.75	9.5-14.5	3.75	6.4-15.1
2+			0.25	21.4	1.75	12.5-18.4	1.75	12.7-17.9
3+							0.5	13.8-17.2
Total	77.75		54.0		62.75		71.75	

In four gill-net lifts, 469 fish weighing 310.68 pounds were collected (Table 2). Fifteen species were represented. Gizzard shad was the most abundant species with 166 collected of which 144 were 4.8 to 7.0 inches in length and young-of-year (YOY). The remaining shad were 13.0 to 14.7 inches in length and all age 1+. Gizzard shad represented 35.4% of the total gill-net catch and at 34 pounds total weight represented 10.9% of the biomass. Gizzard shad are firmly established in Prairie Creek Reservoir but have not contributed to increased growth rate of predator fish like walleye, white bass and black crappie.

Walleye ranked second in the gill-net catch with 84 collected. At 94.59 pounds total weight, walleye ranked first in biomass. Length range was 7.4 to 25.5 inches. Two of the walleye were YOY (Table 3). The 20 inch walleye could not be aged and the 25.5 inch walleye was age 5+. The remaining walleye were ages 1+ through 4+ and 12.5 to 18.5 inches in length.

Length range of the 69 white bass collected was 5.3 to 14.5 inches. Age groups 1+ through 4+ were represented.

Black crappie accounted for 11.3% of the sample by number and 6.7% by weight. Length range was 6.7 to 10.7 inches. Age groups 1+ through 5+ and one age 7+ were collected.

Thirty channel catfish were collected. Length range was 11.1 to 27.3 inches. Nine were over 20 inches.

Length range of the 24 yellow perch collected was 6.3 to 8.7 inches. Age groups 1+ through 4+ were represented.

Other species collected in the gill-nets were: white crappie, common carp, white sucker, quillback, golden shiner, bluegill, green sunfish, longear sunfish and orangespotted sunfish.

Water temperature on 4 October was 66.7 F at the surface on 65.9 F at the bottom near the dam (28 foot depth). Dissolved oxygen was 7.9 parts per million (ppm) at the surface and 5.6 ppm at the bottom.

Fall sampling should continue in 2005 including electrofishing and gill-nets.

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Table 2. SPECIES AND RELATIVE ABUNDANCE OF FISHES COLLECTED BY NUMBER AND WEIGHT					
*COMMON NAME OF FISH	NUMBER	PERCENT	LENGTH RANGE (inches)	WEIGHT (pounds)	PERCENT
Gizzard shad	166	35.4	4.8-14.7	34.00	10.9
Walleye	84	17.9	7.4-25.5	94.59	30.4
White bass	69	14.7	5.3-14.5	32.98	10.6
Black crappie	53	11.3	6.7-10.7	20.67	6.7
Channel catfish	30	6.4	11.1-27.3	71.35	23.0
Yellow perch	24	5.1	6.3-8.7	4.19	1.3
White crappie	15	3.2	6.5-10.1	4.18	1.3
Common carp	9	1.9	16.0-19.4	20.48	6.6
White sucker	6	1.3	13.0-20.2	11.80	3.8
Quillback	4	0.9	16.4-22.7	14.23	4.6
Golden shiner	3	0.6	7.8-9.2	0.78	0.3
Bluegill	3	0.6	7.7-8.2	1.15	0.4
Green sunfish	1	0.2	4.7	0.07	0.0
Longear sunfish	1	0.2	4.9	0.09	0.0
Orangespotted sunfish	1	0.2	5.5	0.12	0.0
Total (15 Species)	469	100.0		310.68	100.0
*Common names of fishes recognized by the American Fisheries Society.					

Table 3. Length frequency and age of fish collected by gill-nets, Prairie Creek Reservoir, 5 October 2005.

	Walleye		White bass		Black crappie		Channel catfish	Yellow perch	
Lgth.	No.	Age	No.	Age	No.	Age	No.	No.	Age
5.5			6	1+					
6.0			9	1+					
6.5			1	1+	1	1+		2	1+
7.0			1	1+	1	2+		4	1+,2+
7.5	2	0+			5	1+		7	1+,2+,3+
8.0					2	2+		6	2+
8.5					14	2+		5	2+,4+
9.0					11	2+,3+			
9.5					10	2+,3+,5+,5+			
10.0			4	2+	7	2+,3+,4+.7+			
10.5	1	1+	7	2+	2	4+			
11.0			10	2+,3+			2		
11.5			13	2+,3+					
12.0			13	3+,4+					
12.5	1	2+	1	3+			1		
13.0	4	1+,2+	1	3+			1		
13.5	11	1+,2+	1	3+			2		
14.0	22	1+,2+	1	3+					
14.5	17	1+,2+,3+	1	3+			2		
15.0	5	1+,2+,4+					2		
15.5	6	2+,3+,4+					1		
16.0	3	2+,3+,4+					1		
16.5	4	2+,3+							
17.0	3	3+					1		
17.5	1	4+					1		
18.0	1	2+					1		
18.5	1	4+					2		
19.0							1		
19.5							3		
20.0	1	Regen.					2		
21.0							1		
22.0							1		
22.5							1		
23.5							2		
25.5	1	5+							
26.0							1		
27.5							1		